

What is claimed is:

1. A power transmission chain, comprising:
  - a plurality of link units aligned in a traveling direction of chain;
  - a plurality of connecting members that link the plurality of link units to one another in a manner so as to be bendable;
  - and
  - guiding members provided correspondingly to the respective connecting members,wherein:
  - each of the link units includes a plurality of links aligned in a width direction of chain orthogonal to the traveling direction of chain;
  - each of the links includes first and second through-holes aligned in the traveling direction of chain for a corresponding connecting member to be inserted therethrough;
  - each of the connecting members includes first and second power transmission members; and
  - either one of the first and second power transmission members is guided by the guiding member, and consequently the one power transmission member moves to the other transmission member while coming into contact with the other power transmission member in a contact state including at least one of rolling contact and sliding contact.

2. The power transmission chain according to Claim 1, wherein each of the links further includes a communication groove through which the first and second through-holes communicate with each other.

3. The power transmission chain according to Claim 1, wherein:

a corresponding first power transmission member is fit into the first through-hole in each of the links in a manner so as to enable relative movements, and a corresponding second power transmission member is fit therein in a manner so as to inhibit relative movements; and

a corresponding second power transmission member is fit into the second through-hole in each of the links in a manner so as to enable relative movements, and a corresponding first power transmission member is fit therein in a manner so as to inhibit relative movements.

4. The power transmission chain according to Claim 3, wherein at least one guiding member is provided correspondingly to each of the connecting members as the guiding member.

5. The power transmission chain according to Claim 4, wherein the at least one guiding member is disposed at an arbitrary position on the connecting member in the width direction of chain.

6. The power transmission chain according to Claim 1, wherein:

the guiding member includes an insert hole; and

the one power transmission member is fit into the insert hole with an play, and the other power transmission member is fixed therein.

7. The power transmission chain according to Claim 6, wherein the other power transmission member is fixed by being press-fit into the insert hole.

8. The power transmission chain according to Claim 6, wherein an inner peripheral surface of the insert hole includes a guiding surface to guide the one power transmission member.

9. The power transmission chain according to Claim 1, wherein:

both a corresponding first power transmission member and a corresponding second power transmission member are respectively fit into the first through-hole in each of the links in a manner so as to enable relative movements; and

both a corresponding first power transmission member and a corresponding second power transmission member are respectively fit into the second through-hole in each of the links in a manner so as to enable relative movements.

10. The power transmission chain according to Claim 9, wherein:

first and second guiding members are provided, respectively, at each end portion of a pair of end portions of a corresponding connecting member as the guiding member;

and

the first and second guiding members cooperate to prevent falling off of the corresponding connecting member and the corresponding link.

11. The power transmission chain according to Claim 9, wherein:

the first guiding member includes a first insert hole, to which a corresponding first power transmission member is fixed and into which a corresponding second power transmission member is fit with an play;

the first insert hole includes a first guiding surface that guides the corresponding second power transmission member for causing the corresponding second power transmission member to come into contact with the corresponding first power transmission member in a contact state including at least one of rolling contact and sliding contact;

the second guiding member includes a second insert hole, to which a corresponding second power transmission member is fixed and into which a corresponding first power transmission member is fit with an play; and

the second insert hole includes a second guiding surface that guides the corresponding first power transmission member for causing the corresponding first power transmission member to come into contact with the corresponding second power transmission member in a contact state including at least one

of rolling contact and sliding contact.

12. The power transmission chain according to Claim 11, wherein the corresponding first power transmission member is fixed by being press-fit into the first insert hole of the first guiding member.

13. The power transmission chain according to Claim 1, wherein a locus of movement of a contact point between the first and second power transmission members of each of the connecting members shape an involute curve.

14. The power transmission chain according to Claim 13, wherein:

the plurality of connecting members include the first and second connecting members;

the locus of the movement of the contact point of the first and second power transmission members of the first connecting members and the locus of the movement of the contact point of the first and second power transmission members of the second connecting members are different from each other; and

at least one of the first connecting members and the second connecting members are arrayed randomly at least in a partial region of the power transmission chain in the traveling direction of chain.

15. The power transmission chain according to Claim 1, wherein:

the plurality of link units include link units of a first specification and link units of a second specification;

a disposition interval between the first power transmission member inserted through the first through-hole and the first power transmission member inserted through the second through-hole in each link of the link units of the first specification is relatively long;

a disposition interval between the first power transmission member inserted through the first through-hole and the first power transmission member inserted through the second through-hole in each link of the link units of the second specification is relatively short; and

at least one of the link units of the first specification and the link units of the second specification are arrayed randomly at least in a partial region of the power transmission chain in the traveling direction of chain.

16. A power transmission device, comprising:

first and second pulleys having, respectively, a pair of sheave surfaces that oppose to each other in a shape of a circular conical surface,

wherein power is transmitted between the first and second pulleys via the power transmission chain according to any of Claims 1 through 15.